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# Corrigendum

Volume **73**, Number 1 (1980), in the article "Abstract Study of Optimality Conditions" by Szymon Dolecki, pp. 24–48:

**I.** Professor J. M. Borwein of Carnegie–Mellon University pointed out that Theorem 2.4, as stated, is not valid. Indeed, it becomes true, when we allow the functions on $X$ to admit infinite values; dual multifunctions are defined then on $\bar{\mathbb{R}}^X$ (extended-real-valued functions on $X$). The same applies to Proposition 5.10.

More generally, let $F$ be a class of functions on $X$ and $\Phi$ a class of functions on $Y$. Consider a multifunction $\Gamma$ from $Y$ into $X$; the dual multifunction of $\Gamma$ (with respect to $F$ and $\Phi$) acts from $F$ into $\Phi$, being defined by

$$\Gamma^{\Phi} f = \{\varphi \in \Phi: \sup_{y \in \Gamma_x^{-1}} \varphi(y) \leqslant -f(x), x \in X\}$$

for $f$ in $F$.

On treating $Y$ and $X$ as families of (extended-real-valued) functions on $\Phi$ and $F$, respectively, we may talk about $X$-duals of multifunctions from $F$ into $\Phi$. Let $F + \Phi$ denote the family of functions on $X \times Y$ of the form $\{f + \varphi, f \in F, \varphi \in \Phi\}$.

THEOREM [1, Prop. 5.4; 2; 3]. *The graph of the $X$-dual of the $\Phi$-dual of $\Gamma$ is equal to the $F + \Phi$-hull of the graph of $\Gamma$:*

$$\mathcal{G}(\Gamma^{\Phi X}) = \mathrm{co}_{F+\Phi} \mathcal{G}(\Gamma).$$

**II.** The Lagrangian of Rockafellar (6.10) is not, as stated, the Lagrangian associated with $(F, \Gamma y_0)$, but the Lagrangian of the multifunction $\mathbb{P}_X(\varepsilon_F^{-1} \cap \mathbb{P}_Y)$, $\mathbb{P}$ denoting the respective projection multifunction. The correct statement can be found in [4].

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